

INDEX

A

Ac electrical systems, 4-1

- alternators, 4-1
- rectifiers, 4-2
- regulators, 4-2

Acceptance inspection, 9-3

Adjustable suspension angles, 12-8

- caster/camber adjustments, 12-10
- eccentrics adjustment, 12-10
- elongated holes adjustment, 12-10
- MacPherson-struts, 12-11
- shims adjustment, 12-10
- toe-end and steering wheel adjustment, 12-11

Air brake systems, troubleshooting, 6-13

- air buildup test, 6-14
- air leakage test, 6-14
- trailers, 6-14
- visual inspection, 6-13

Air compressors, 8-1

- aftercoolers, 8-10
- air intake system, 8-7
- air receiver, 8-9
- intercoolers, 8-10
- lubrication system, 8-11
- overhaul, 8-14
- pressure control system, 8-6
- reciprocating-type air compressor, 8-3
- rotary vane-type air compressor, 8-3
- safety devices, 8-5
- screw-type air compressor, 8-4

Air conditioning, 13-1

- adding refrigerant, 13-20
- bubble leak detector, 13-17
- certification, 13-22

Air conditioning-Continued

- components of the air-conditioning system, 13-5
- compressor, 13-10
- condenser, 13-16
- electronic leak detector, 13-17
- evaporator, 13-7
- expansion system, 13-5
- expansion tube, 13-7
- expansion valve, 13-6
- four-cylinder radial compressor, 13-15
- functional testing of the air-conditioning system, 13-21
- handling refrigerant, 13-1
- hazardous waste, 13-22
- heat transfer, 13-1
- hot gas bypass valve, 13-8
- inspecting the air-conditioning system for leaks, 13-17
- internally charged leak detector, 13-17
- malfunction of the compressor, 13-17
- malfunction of the condenser, 13-17
- malfunction of the evaporator, 13-17
- malfunction of the expansion valve, 13-17
- malfunction of the receiver/dryer, 13-17
- other refrigerants, 13-22
- pilot-operated absolute suction throttling valve, 13-10
- pressure temperature relationship, 13-1
- principles of refrigeration, 13-1
- propane torch leak detector, 13-18
- purging the air-conditioning system, 13-19
- receiver/dryer, 13-5
- refrigerant, 13-1
- refrigeration cycle, 13-4
- six-cylinder axial compressor, 13-15

Air conditioning-Continued

suction throttling valve, 13-8

thermostatic switch, 13-8

troubleshooting, 8-14

two-cylinder reciprocating compressor, 13-10

Air-over-hydraulic brake systems, troubleshooting,
6-16

operating troubles, 6-16

Alfa company shops supervisor, 2-1, 2-2

Alfa company steel shop, 2-5

Alignment procedures, 12-6

suspension and steering systems checks, 12-6

Alternators troubleshooting, 4-9, 4-11

Antilock brakes, 6-19

Automatic transmission hydraulic system operation,
7-14

basic functions, 7-14

Automatic transmission service, 7-16

adjusting linkage, 7-17

adjusting lockup bands, 7-17

changing fluid, 7-17

checking the fluid, 7-16

overhaul, 7-19

Automatic transmissions, 7-7

Automotive shop supervisor, 2-4

Axles, wheels, and tracks, 11-18

driving wheels, 11-20

full-floating axles, 11-19

full track, 11-20

gear cases, 11-20

lubrication charts, 11-20

semi floating axles, 11-18

service and maintenance, 11-20

three-quarter floating axles, 11-18

universal joints and slip joints, 11-20

B

Battalion Equipment Evaluation Program, 2-19

COMCBPAC/COMCBLANT responsibilities,
2-23

joint responsibilities, 2-19

repair parts, 2-24

responsibilities of the battalion being relieved, 2-19

responsibilities of the relieving battalion, 2-19

Battalion maintenance program, 2-7

Equipment Repair Order and Continuation Sheet,
2-13, 2-14

intermediate maintenance, 2-9, 2-10

organizational maintenance, 2-8

scheduling maintenance, 2-10

Battalion maintenance shop inspector, 9-5

Battery drain test, 4-8

Beep inspections, 9-5

Brake horsepower, 3-2

Breaker point ignition system, 4-22

coil resistance tests, 4-23

primary resistance tests, 4-22

secondary resistance tests, 4-23

C

Camshaft, 3-21

checking, 3-21

replacing, 3-21

Carburetor overhaul, 5-1

disassembly and cleaning, 5-1

manufacturer's instructions and tools, 5-1

reassembly and adjustment, 5-2

repair and replacement, 5-2

testing, 5-2

CESE disposal, 1-14

inventory adjustment, 1-14

serviceable equipment, 1-14

unserviceable equipment, 1-14

Charging system, troubleshooting with a volt-amp tester, 4-4

 circuit resistance test, 4-7

 ground circuit resistance test, 4-8

 insulated circuit resistance test, 4-7

Clutch assemblies, 7-5

 double disk, 7-5

 plate clutch, 7-5

 single disk, 7-5

Clutch malfunctions, 7-5

 clutch noises, 7-6

 clutch pedal pulsations, 7-7

 dragging, 7-5

 grabbing, 7-6

 slipping, 7-6

 stiff clutch pedal, 7-7

 whine, 7-6

Clutch operating systems, 7-4

 hydraulic, 7-4

 mechanical, 7-4

Clutch systems, 7-1

Clutch troubleshooting chart, 7-7

Commercial contractors, 1-11

Compression test, 3-11, 3-12

Computerized ignition, 4-20

 barometer pressure sensor, 4-20

 coolant temperature, 4-21

 crankshaft position sensor, 4-21

 EGR valve and sensor, 4-21

 manifold absolute pressure sensor, 4-20

 metal pulse ring, 4-21

 throttle position sensor, 4-21

 troubleshooting, 4-22

Connecting rod noise, 3-10

Contract maintenance and repairs, 1-11

COSAL Support, 2-15

Cost control supervisor, 2-6

Cost control, 1-4

 cost justification, 1-6

 depth of maintenance, repair and overhaul, 1-6

 records and reports, 1-4

Crane inspection, 9-8

Crankshaft knock, 3-11

Crankshaft servicing, 3-22, 3-24

 checking bearing fit, 3-23

 checking end play, 3-24

 checking journals and bearings, 3-24

 crankshaft storage, 3-24

 removing bearing caps, 3-22

Cylinder leakage test, 3-13

Cylinder servicing, 3-25

 checking walls, 3-25

 cylinder liner replacement, 3-26

 refinishing, 3-25

D

Dc Generator delta connected stator, 4-1

Dc Generator "Y" connected stator, 4-1

Dc Generators, troubleshooting, 4-5, 4-8

 excessive output test, 4-6

 ground circuit test, 4-8

 insulated resistance test, 4-7

 resistance test, 4-6

Deadline inspection, 9-8

Defense Reutilization and Marketing Office (DRMO),
 2-25

 cese disposal, 2-26

 hazardous material disposal, 2-26

Diagnosing engine problems, 3-10

 engine noises, 3-10

 excessive oil consumption, 3-10

 low oil pressure, 3-10

 testing, 3-10, 3-13

- Diesel fuel systems, 5-8
 - air induction systems, 5-30
 - American Bosch fuel pump, 5-16
 - blowers, 5-30
 - Caterpillar fuel injection systems, 5-8
 - Cummins Pressure Time fuel system, 5-26
 - General Motors fuel injection system, 5-21
 - Roosa Master fuel injector pump, 5-13
 - superchargers, 5-32
 - turbochargers, 5-33
- Differentials, 11-15
- Diodes, 4-2
 - charging circuit, 4-2
 - open and shorted, 4-10
 - troubleshooting, 11-15
 - weak, 4-11
- Drawbar and belt horsepower, 3-3
- E**
- Electronic ignition system (Chrysler), 4-17
- Electronic ignition system troubleshooting, 4-16, 4-22
- Electronic lean burn/electronic spark control (Chrysler), 4-18
- Embarkation, 2-24
 - inspecting, 2-24
 - preparing, 2-24
 - scheduling, 2-24
 - staging, 2-24
 - transporting, 2-24
- Embarkation inspection, 9-6
- Emergency/parking brakes, 6-17
 - inspection, 6-18
 - testing, 6-18
- Engine analyzer screen, troubleshooting the alternator, 4-9, 4-11
 - bypass procedures, 4-10
 - charging circuit diodes, 4-10
 - open and shorted diodes, 4-10
 - shorted windings, 4-11
 - weak diodes, 4-11
- Engine noise, 3-10
 - connecting rod, 3-10
 - crankshaft, 3-11
 - piston pin, 3-11
 - piston ring, 3-11
 - piston slap, 3-11
 - valve and tappet noise, 3-10
- Engine overhaul, 3-1
 - diagnosing engine problems, 3-10
 - power losses and failure, 3-8, 3-9
 - servicing cylinders, 3-24
 - servicing pistons and rings, 3-27
 - servicing the crankshaft, 3-23
 - servicing valves, valve mechanisms, and cylinder heads, 3-17
- Equipment maintenance branch manager, 1-2
- Equipment warranties and deficiencies, 1-11
 - in continental United States, 1-14
- F**
- Federal Motor Carrier Safety Regulations Handbook, 6-18
- Field maintenance, 2-4
- Final inspection, 9-11
- Friction horsepower, 3-2
- G**
- Gauge care and maintenance, 3-14

Gasoline fuel injection system sensors, 4-20

- barometer sensor, 4-20
- coolant (thermistor) sensor, 4-21
- crankshaft position sensor, 4-21
- manifold absolute pressure sensor, 4-20
- metal pulse ring, 4-21
- throttle position sensor, 4-21

Gasoline fuel injection systems, 5-3

- continuous flow system, 5-6
- electronic timed system, 5-3
- mechanical timed system, 5-3
- throttle body system, 5-7

Graphs and diagrams, 3-3

- performance curves, 3-3
- timing diagrams, 3-4

Grinding valve seats, 3-18

Grinding valves, 3-17

H

Hazardous material, 2-24

- spills and cleanup, 2-25
- storage, 2-25

Heavy shop supervisor, 2-4

Horsepower and horsepower ratings, engine overhaul,

3-1, 3-3

- brake horsepower, 3-2
- drawbar and belt horsepower, 3-3
- friction horsepower, 3-2
- indicated horsepower, 3-1

Hydraulic and pneumatic systems, 10-1

- accumulators, 10-19
- actuators, 10-10
- basic principles of hydraulics and pneumatics, 10-1
- check valves, 10-17
- cylinders, 10-10
- filter classifications, 10-23
- filter elements, 10-21

Hydraulic and pneumatic systems—Continued

- filters, 10-21
- flushing the system, 10-33
- hydraulic system contamination, 10-30
- maintenance, 10-29
- motors, 10-12
- Pascal's law, 10-2
- pressure regulator valves, 10-15
- pumps, 10-3
- relief valves, 10-14
- representative hydraulic system, 10-25
- reservoirs, 10-18
- selector valves, 10-16
- troubleshooting, 10-28
- valves, 10-14

Hydroboost power brake system, troubleshooting, 6-12

- excessive noise, 6-13
- hard pedal, 6-12
- pedal pulsation, 6-12
- sensitive brakes, 6-13
- slow pedal return, 6-12

Hydroboost power brake systems, 6-10

I

Ignition system troubleshooting, 4-22, 4-25

- breaker point ignition system, 4-22
- electronic ignition system, 4-25
- transistor ignition system, 4-23
- unit ignition systems, 4-19

Ignition systems, 4-15, 4-22

- breaker point ignition system, 4-22
- capacitor discharge ignition system, 4-17
- Chrysler electronic ignition system, 4-17
- Chrysler electronic lean burn system/electronic spark control, 4-18
- magnetic pulse ignition system, 4-16
- unit ignition system (Delco-Remy), 4-19

Inspecting and troubleshooting hydraulic brake systems, 6-1

brake drum inspection, 6-3

car pulls to one side, 6-9

copper tubing, 6-1

does not self adjust, 6-9

dragging brakes, 6-3

fluid loss, 6-9

hard to apply, 6-9

leakage test, 6-1

lining inspection, 6-3

noise, 6-9

pedal reserve, 6-3

silicone brake fluid, 6-2

soft pedal, 6-9

too sensitive, 6-9

warning light problems, 6-9

L

Lighting systems and accessories, troubleshooting, 4-25

accessory motors, 4-29

brake lights, 4-28

directional signals, 4-28

fuses and circuit breakers, 4-27

headlights, 4-26

horns, 4-28

Lubrication rack, 2-5

M

Maintenance and repair foreman, 1-3

Maintenance branch, setting up, 2-1

area selection, 2-1

heat, light, and ventilation, 2-2

safety, 2-3

tools and equipment, 2-2

Maintenance, preventive, 1-4

operator's maintenance, 1-4

safety inspections, 1-4

service station, 1-4

unscheduled maintenance service, 1-4

Maintenance program, battalion, 2-7

depot maintenance, 2-10

Equipment Repair Order and Continuation Sheet, 2-13

intermediate maintenance, 2-8

organizational maintenance, 2-8

scheduling maintenance, 2-10

Maintenance shop personnel, duties and responsibilities, 2-3

automotive shop supervisor, 2-4

cost control supervisor, 2-6

DTO parts clerk, 2-6

heavy equipment shop supervisor, 2-4

maintenance shop inspector, 2-4

maintenance supervisor, 2-3

support shop supervisor, 2-4

technical librarian, 2-7

N

Nonadjustable suspension angles, 12-12

steering axis inclination (SAI), 12-12

turning radius, 12-12

O

Oil consumption, excessive, 3-10

Oil pressure, low, 3-10

P

Performance curves, graphs and diagrams, 3-3

Planetary gears, 7-10

Power takeoffs, 11-14

Preservation inspection, 9-7

Production control supervisor, 1-2

Propeller shaft assemblies, 11-14

Property record card, DD Form 1342, 9-3

Public works shop inspector, 9-2

PW transportation division director, 1-2

PW transportation shops supervisor, 1-2

 construction and specialized equipment shop
 foreman, 1-2

 cost control, 1-4

 department organization, 1-1

 duties and responsibilities of supervisory
 personnel, 1-2

 maintenance and repair foreman, 1-3

 manager of the equipment maintenance branch,
 1-2

 preventive maintenance, 1-4

 production control supervisor, 1-2

 progress control and charting procedures, 1-9

 storage, preservation, and depreservation of
 vehicles and equipment, 1-6

 technical assistance (temc activity visits), 1-14

 techniques of scheduling, 1-7

 transportation division director, 1-2

R

Repair parts, 2-14

 job control numbers, 2-18

 procedures for requesting repair parts, 2-17

 technical manuals, 2-17

 wrong parts, 2-18

S

Safety inspections, 1-4

Scheduling techniques of, 1-7

Service station maintenance, 1-4

Solenoid switch resistance test, 4-15

Steering and alignment trouble, 12-12

Steering geometry, 12-1

Safety precautions, 12-5

 camber angle, 12-1

 caster angle, 12-2

 kingpin inclination, 12-3

 steering axis inclination, 12-3

 toe-in, 12-3

 tracking, 12-5

 turning radius, 12-5

Stopping distances, 6-1

Storage, preservation, and depreservation of vehicles
 and equipment, 1-6

supply aids, 2-15

Support shop supervisor, 2-4

T

Tachometer, 3-14

Technical library, 2-17

Testing engine problems, 3-11

Timing diagrams, 3-4

 compression test, 3-11

 cylinder leakage test, 3-13

 four-stroke cycle engines, 3-5

 multicylinder engines, 3-6

 two-stroke cycle engines, 3-6

 vacuum test, 3-13

Tire shop, 2-5

Tools for front-end alignment, 12-6

Torque converter operation, 7-11

 fluid coupling, 7-12

 stator operation, 7-13

 torque multiplication, 7-11

Track alignment, 12-13

 adjustment of the front idler, 12-14

 track roller frame alignment with sprocket, 12-14

Transfer cases, 11-9

 troubleshooting, 11-9

- Transmission, standard, 11-1
 - inspecting the transmission, 11-4
 - testing the transmission, 11-6
 - transmission overhaul, 11-8
 - transmission troubleshooting, 11-2
- Troubleshooting the alternator using the engine analyzer screen, 4-9
- Troubleshooting the charging system using the volt amp tester, 4-4
 - alternator test, 4-5
 - battery drain test, 4-8
 - bypass procedure, 4-10
 - charging circuit diodes, 4-10
 - charging system circuit resistance test, 4-6
 - charging system insulated circuit resistance test, 4-7
 - excessive output test, 4-6
 - generator test, 4-5
 - open and shorted diodes, 4-10
 - regulator ground circuit resistance test, 4-8
 - shorted windings, 4-11
 - weak diodes, 4-11
- Troubleshooting the cranking system using the battery, starter test, 4-11
 - cranking voltage test, 4-12
 - solenoid switch circuit resistance test, 4-15
 - starter ground circuit resistance test, 4-14
- Troubleshooting the cranking system using the battery, starter test-Continued
 - starter insulated circuit resistance test (cables and switches), 4-13
 - starting motor current draw test, 4-12
- Troubleshooting the ignition systems, 4-22
 - breaker point systems, 4-22
 - electronic ignition system, 4-25
 - transistor ignition systems, 4-23
- Troubleshooting vacuum power brake systems, 6-10
 - grabby brakes, 6-10
 - hard pedal, 6-10
 - loss of fluid, 6-10
- U**
- Unscheduled maintenance service, 1-4
- V**
- Volt-amp tester, troubleshooting the charging system, 4-4
 - alternator test, 4-5
 - battery drain test, 4-8
 - charging system circuit resistance test, 4-6
 - charging system ground resistance circuit test, 4-6
 - charging system insulated circuit resistance test, 4-7
 - excessive output test, 4-6
 - generator test, 4-5
 - regulator ground circuit resistance test, 4-8